

THREE NEW SPECIES OF NEEA (NYCTAGINACEAE) FROM PANAMA

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In 1961 the Nyctaginaceae was surveyed for the Flora of Panama (Ann. Missouri Bot. Garden 48: 51-65) by Robert E. Woodson in collaboration with H.J. Kidd. Three species of Neea were recognized as being present in Panama: N. delicatula Standley, N. laetevirens Standley, and N. amplifolia Donn. Smith. More than four fifths of the collections cited were from only three of the nine provinces of the Republic: Bocas del Toro, Canal Zone, and Panama. Only two collections from the Province of Darien were included: Allen 268 and Pittier 6547. As a result of several recent collections in Darien, made especially by James Duke, the number of species on the Isthmus may be increased from three to six.

In their key to species Woodson and Kidd utilized for the most part inflorescence and floral characters, specifically the pattern of the cymules and the length of the pedicels. These intergrade considerably and are not particularly strong diagnostic characters. In the present paper we do not propose to discuss the systematics of these three species, although recent collections are listed below. Fortunately the foliage of the three new species provide sharp distinguishing characters. In the following key the characters which Woodson and Kidd utilized in distinguishing the three species are accepted.

- a. Leaves mostly alternate, always petiolate
 - b. Larger leaves mostly obovate, obovate-elliptic or ovate-elliptic.
 - c. Leaves 2-4 cm wide; cymules obviously dichasial, the terminal flowers sessile..... 1. N. delicatula
 - cc. Leaves (3-) 5-15 cm wide; cymules obscurely dichasial the terminal flowers subsessile..... 2. N. amplifolia
 - bb. Larger leaves elliptic.
 - d. Leaves membranaceous or thin-papyraceous, the lateral veins obvious
 - e. Leaves glabrous above; leaf blades (3-) 5-9 cm wide 3. N. laetevirens
 - ee. Leaves puberulent above; leaf blades up to 5 cm wide 4. N. elegans.
 - dd. Leaves thickly papyraceous or subcoriaceous, the lateral veins evanescent 5. N. darienensis.
 - aa. Leaves opposite and amplexicaul 6. N. amplexicaulis.

1. *NEEA DELICULATA* Standley, Contr. U.S. Nat. Herb. 18: 98. 1916.
PANAMA: Bayonet Island (Perlas Archipelago),
Dwyer 1741 (MO).
2. *NEEA AMPLIFOLIA* Donn. Smith, Bot. Gaz. 61: 386. 1916.
CANAL ZONE: Barro Colorado Island: Sr. M. Victoria
Hayden 29 (MO); 67 (MO); A. Robyns 65-3 (MO). DARIEN:
Pinogana to Yaviza, Duke 5163 (MO).
3. *NEEA LAETEVIRENS* Standley, Field Mus. Publ. Bot. 4: 204. 1929.
CANAL ZONE: Barro Colorado Island, Sr. M. Victoria Hayden
151 (MO); 12 m S Colon, Tyson 2317 (MO). DARIEN: Cocalita,
Dwyer 5158 (MO); trail between Paya & Palo de las Letras,
Stern, Chambers, Dwyer & Ebinger 196 (MO); between Paya
& Payita, Stern et al 368 (MO); 379 (MO); between Paya
& Boca de Paya, Stern et al 436 (MO).
4. *NEEA ELEGANS* Dwyer & Hayden, sp. nov.
FRUTEX, ramulis primo teretibus ultime compressis minute
rufo-pubescentibus. FOLIA alternata, petiolis 5-15 cm longis,
rufo-pubescentibus; lamina anguste elliptica, 7-17 cm longa,
3.5-5.0 cm lata, apice attenuato-acuminata, acumine ad 1.2 cm
longo, basi acuta, tenui-papyracea, puberula, ciliolis minutis
irregulari-contortis modice crebris, costa infra prominula, venis
lateralibus ca 7, primo late arcuatis tunc forte ascendentibus,
areolis intervenialibus patulis. INFLORESCENTIAE terminales,
cymoso-paniculatae, ad 7 cm longae, ad 5.5 cm latae, pedunculo
ad 3 cm longo, ad 0.2 cm lato, rufo-pubescente, ramis paucis
proximis vel distantibus, supra medium cymulos patulos paucifloros
ferentibus, floribus terminalibus solitariis sessilibus, floribus
lateralibus pedicellatis, pedicellis ca 2 mm longis, puberulis,
bracteolis geminatis subulatis, ca 0.5 mm longis, divergentibus.
FLORES (hic ♂) perianthio sessili elliptico-urceolato, ca 5.5 mm
longo, ca 1.7 mm lato, minute rufo-pubescente, dentibus minutis;
stamina ca 8, inaequalia, antheris ca 1.1 mm longis. FRUCTUS non
visi.
PANAMA: Darien: rd fr El Real to Pinogana, Duke 5144
(MO, Holotype).

The new species is readily recognized by its salicoid
leaf blades and short, relatively few-flowered inflorescence.

5. *NEEA DARIENENSIS* Dwyer & Hayden, sp. nov.
ARBORES ad 10 m altae, ramulis teretibus laevibus glabris.
FOLIA alternata, petiolis 1-2 cm longis inconspicue alatis;
lamina elliptica (aut foliis minoribus elliptico-rotundis vel
obovato-rotundis, apice obtusis), 7.5-20 cm longa, 4.5-9 cm lata,
apice acuminata, acumine ad 2 cm longo, 0.8 cm lato, crasso-
papyracea, omnino glabra, venis lateralibus ca 10, arcuatis evan-
escentibus. INFLORESCENTIAE (hic in fructu) terminales pyramidato-
paniculatae in vivo rubrae, carnosae, pedunculo subplano-com-

presso lignoso, ad 4.5 cm longo, ca 0.3 cm lato, ramis inferioribus ad 4.5 cm longis, superioribus ca 5 bene distantibus, reflexis, ramis ultimis terminalibus paucifloris subcruciforme dispositis, cicatricibus pedicellorum deciduorum conspicuis. FRUCTUS elliptici vel oblongi, ad 1.3 cm longi, obtusi, in sicco nigri, cicatrice calycis nullo, mesocarpio carnosio, endocarpio fibroso, seminibus solitariis, exalbuminosis, testa papyracea, contyledonibus carnosis, ca 4 mm longis, ca 0.5 mm crassis, eis crassam curvatam radiculam omnino tegentibus.

PANAMA: Darien: vic Paya, Rio Paya, Stern, Chambers, Dwyer & Ebinger 429 (MO, Holotype).

The thickly papyraceous leaf blades which perhaps are better described as being subcoriaceous, and the lignose fruiting inflorescence are strikingly different from the other Central American species of the genus except Neea amplexicaulis described as new below. N. darienensis, on the other hand, has conspicuously petiolate and alternate leaves.

6. NEEA AMPLEXICAULIS Dwyer & Hayden, sp. nov.

ARBORES, ramulis laevibus glabris. FOLIA amplexicaulia, opposita; lamina elliptica vel rectangulari-elliptica, 12-26 cm longa, 6.5-11 cm lata, apice obtusa tunc breviter acuminata, basi rotundo-truncata vix cordata, coriacea glabra in sicco nigro-brunnea, costa supra prominula, infra subprominente, venis lateralibus 15-20 (folia maiora), 1-2.5 cm distantibus, late divergentibus tunc stricte et integre $2/3$ ad marginem extendentibus tunc late bifurcatis, areolis intervenialibus patulo-reticulatis. INFLORESCENTIAE terminales, ad 10 cm longis, in vivo rubrae, pedunculo ad 6 cm longo, 1.8 cm lato, rufo-puberulo, ramulis primariis 2, ascendentes, ramulis secundariis alternatis vel oppositis divergentibus, 0.5-2 cm longis, cymulis in parte superiore ramulorum persistentibus, floribus digitate dispositis. FLORES (hic ♂) sessiles, bracteolis conspicue late triangularibus, ca 0.6 mm longis, obtusis arachnoideo-rufo-pubescentibus liberis sed infra perianthum ternate dispositis, periantho oblongo, ca 2.3 mm longo, ca 1 mm lato, obtuso, carnosio, praesertim basi arachnoideo-pubescente; stamina ca 6, antheris ca 1 mm longis. FRUCTUS ramis inflorescentiarum crasse lignosis, 1.3-2.5 mm crassis, cicatricibus anthocarporum conspicue annularibus, anthocarpis ovato-ellipticis, ca 1 cm longis, ca 0.45 cm latis, fibroso-lignosis, arachnoideo-pubescentibus, apice pulvino annulo ornatis.

PANAMA: Darien: Rio Pirre, Duke & Bristan 8288 (MO, Holotype); Santa Fe, Duke 8401 (MO); vic Campamento Buena Vista, Rio Chucunaque above confluence with Rio Tuquesa, Stern, Chambers, Dwyer & Ebinger 855 (MO).

The new species is readily recognized by its opposite and amplexicaul leaves.